

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Syed(U.S. Patent 6,203,656) in view of Williamson et al.(U.S. Patent 4,534,813) and Blackwell.(U.S. Patent 5,073,457)

Syed discloses a method for making an acoustic panel by stacking a porous acoustic skin(Col. 2, ll. 29), a primary honeycomb(16), a multi-perforated septum(Col. 2, ll. 60-62) which can be made of fiberglass impregnated with resin(Col. 3, ll. 43-45), a secondary honeycomb(18), and an impermeable skin(24) on a mold, applying transverse pressure(Col. 3, ll. 17-20), and curing them to bond them together in the desired shape. The reference does not disclose forming the septum by applying separate parts to the honeycomb on the mold such that they abut each other so as to approximate the final shape. Williamson et al. discloses forming a complex curvature to a fabric(Col. 1, ll. 12-13) by mapping the surface and cutting several shapes which are pieced together abutting to form the final shape.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the septum of Syed from multiple parts which are applied to the surface of the honeycomb so that the septum would accurately fix the complex curvature of the article,(Col. 1, ll. 12-14,

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44-47) thus using a known technique to improve a similar article in the same way. While Syed does not explicitly disclose the porous acoustic skin is perforated, one in the art would appreciate that since the skin is porous, it effectively has a multitude of holes. Additionally, the reference indicates skin has a conventional configuration (Col. 2, ll. 30), and since such skins are conventionally perforated, it would be perforated. As to the error E, one in the art would appreciate that since creases would not be desirable, one in the art would appreciate that a minimum distance between the septum and honeycomb would be desired and would use the appropriate number of septum sections to insure this. As applicant's claim indicates that below E, creases and tearing do not occur, reducing the distance between the septum and the honeycomb to prevent creasing and tearing would effectively bring the maximum error below E.

As to the limitation of an adhesive being present on the septum which allows the components to be placed thereon before final bonding, Blackwell discloses an adhesive which allows placement of an article and allows it to be adjusted until one is satisfied with the placement. (Col. 2, ll. 1-5) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a repositionable adhesive such as that of Blackwell on the septum components since this would allow placements of the components and their adjustment until the optimal placement is determined. (Col. 2, ll. 1-5)

As to the limitation of the error being between less than 2.5 mm, since the final surface is made of developable shapes, one in the art would appreciate that the flat pieces of the septum would be in close contact with the developable surface and thus

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the error would be less than 2.5 mm. One the art would appreciate that the layers are not very elastic and would minimize the distance between the first and final locations as much as possible to prevent tearing, leading to an error of less than 2.5 mm.

Regarding claim 2, one in the art would appreciate that the least number of septum pieces would be used.

Regarding claim 7, Syed discloses the septum can be pre-perforated(Col. 2, ll. 66)

Regarding claim 9, one in the art would appreciate that the septum could be perforated before or after cutting to the desired shapes, and these are obvious alternatives in the art. Additionally, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perforate after cutting since perforations would not be made in areas which would later be discarded as scrap.

Regarding claim 10, Syed discloses the septum is fiber reinforced material in a resin matrix.(Col. 3, ll. 43-44) It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the septum of glass fiber fabric impregnated with resin since this would be an easy way to include fiberglass reinforcement as is known in the art and to use epoxy since epoxy is a well-known and conventional curable resin for use in pre-pregs.

3. Claims 1, 6, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Syed, Williamson et al., and Blackwell.

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The admitted prior art discloses a method for making an acoustic panel by stacking a multi-perforated acoustic skin, a primary honeycomb, a multi-perforated septum made of fabric impregnated with resin, a secondary honeycomb, and an impermeable skin together(Pg. 2, ll. 35- Pg. 3, ll. 11) The reference does not disclose the exact curing process. Syed discloses layering the material up on a mold, applying transverse pressure(Col. 3, ll. 17-20), and curing them to bond them together in the desired shape. The reference does not disclose forming the septum by applying separate parts to the honeycomb on the mold such that they abut each other so as to approximate the final shape. Williamson et al. discloses forming a complex curvature to a fabric(Col. 1, ll. 12-13) by mapping the surface and cutting several shapes which are pieced together abutting to form the final shape.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to lay everything up on the mold to form the final product since Syed discloses making a similar product using a mold and to make the septum of the admitted prior art from multiple parts which are applied to the surface of the honeycomb so that the septum would accurately fix the complex curvature of the article(Col. 1, ll. 12-14, 44-47) thus using a known technique to improve a similar article in the same way. As to the error E, one in the art would appreciate that since creases would not be desirable, one in the art would appreciate that a minimum distance between the septum and honeycomb would be desired and would use the appropriate number of septum sections to insure this. As applicant's claim indicates that below E, creases and tearing do not occur, reducing the distance

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between the septum and the honeycomb to prevent creasing and tearing would effectively bring the maximum error below E.

As to the limitation of an adhesive being present on the septum which allows the components to be placed thereon before final bonding, Blackwell discloses an adhesive which allows placement of an article and allows it to be adjusted until one is satisfied with the placement. (Col. 2, ll. 1-5) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a repositionable adhesive such as that of Blackwell on the septum components since this would allow placements of the components and their adjustment until the optimal placement is determined. (Col. 2, ll. 1-5)

As to the limitation of the error being less than 2.5 mm, since the final surface is made of developable shapes, one in the art would appreciate that the flat pieces of the septum would be in close contact with the developable surface and thus the error would be less than 2.5 mm. One in the art would appreciate that the layers are not very elastic and would minimize the distance between the first and final locations as much as possible to prevent tearing, leading to an error of less than 2.5 mm.

Regarding claim 6, since the holes in the septum are intended to remain open, one in the art would appreciate that they would be checked for blockage by the adhesive prior to assembly.

Regarding claim 11, while the references do not disclose the septum is coated with adhesive, one in the art would appreciate that since multiple parts are being laid up on a surface, the parts could move relative to one another. It would have been obvious

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to one of ordinary skill in the art at the time the invention was made to use an adhesive on the septum of the admitted prior art, Syed, and Williamson et al. to keep the septum parts in place relative to one another when they are placed on the honeycomb and to make the adhesive have strength the moment it contacts the honeycomb to keeps the parts from moving relative to one another.

Regarding claim 12, one in the art would appreciate that the adhesive would allow movement of the parts after placement to allow them to be shifted to best fit the honeycomb so as to cover the most surface of the honeycomb.

Response to Arguments

4. Applicant's arguments filed 11/20/09 have been fully considered but they are not persuasive.

Regarding applicant's argument that it is unreasonable to assert one would have recognized that a maximum error is less than 2.5 mm, examiner is not required to find a maximum error to establish a prima facie case, only a data point within applicant's claimed range. Since applying the concept of Williamson would result in a very small deviation between the starting and final surfaces, this would meet the claim limitation.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA J. MUSSER whose telephone number is (571)272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BJM

/B. J. M./

Examiner, Art Unit 1791

/Richard Crispino/

Supervisory Patent Examiner, Art Unit 1791